

REMARKS

Reconsideration of the rejection of the subject matter of this application is requested.

Status of Claims

Claims 28-30 and 32-42 remain for consideration. New claim 43 has been added.

The Drawing

The drawing appears to be acceptable.

Background

Claims 40-42, except for informalities noted in the Office Action, have been found by the Examiner to contain allowable subject matter. As pointed out earlier, an examination of Fig. 16 for instance, makes evident the fact that although element 74 overlies element 46 in this embodiment, it clearly does not matter, in terms of the functionality of the device, where on the field plate the contact window 74 is formed. Accordingly, applicants believe they are entitled to claims that are broader in scope, namely not limited to the placement of the contact window recited in claims 40-42. Hence prosecution will continue.

Amendments

The amendments made to independent claims 28, 35 and 36 clarify features or add features that are discussed below.

Rejections of Record

Rejections of record to which this paper responds are:

Claims 28-30, and 33-38 stand rejected under 35 U.S.C. 103(a) as unpatentable over Kondo in view of Gardner

Claims 32 and 39 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo in view of Gardner, further in view of Davis et al.

Argument

In earlier papers in this prosecution the Kondo patent and the Davis et al. patent have been analyzed and argued in some detail. Applicant relies on those arguments in this response as if they were incorporated in this paper. The new ingredient, the Gardner reference, which was not relied on in earlier rejections, will be addressed in detail here. That reference was cited in applicant's IDS. However, the Examiner indicates that the IDS was received too late for consideration in the Final rejection. It is presumed that the new rejection entered in this Office Action is justified by that fact, and, BUT FOR THE GARDNER REFERENCE, the rejections would not have been made.

Consequently this paper will address mainly the Gardner reference.

The Gardner reference shows a device that, in the context of the invention and this discussion, is exactly the same as Fig. 18 in applicant's application. – a figure applicant designates as "Prior Art". A careful reading of the introduction of the application and the background, where Fig. 18 is discussed and contrasted with the invention, will be most helpful. The precise wording of this passage is significant, since the difference in at least one case is subtle. An aspect of the invention is to form both the contacts to the field plate (and to the resistor), as well as runners that traverse the area over the field plate, in a single level of metal.

To summarize the invention and the relationship of it to Gardner, the Gardner reference lacks a series of runners over the field plate. It also lacks a second level of interconnection. So with just the Gardner reference before us, it is a matter of conjecture how one would interconnect the buried resistor, the field plate, and the remaining circuit elements, as they would exist in an integrated circuit. The Kondo reference shows how to do that. Kondo shows how one skilled in the art would approach the problem of interconnecting the two terminals of the resistor, and also make electrical connection to the field plate. They would use three connections. By "three connections" it is meant to convey that there are three areas of the device that are devoted to achieving the interconnections. The "area" mentioned is x-y area corresponding to what is referred to as "chip area" and what all workers seek to minimize. In the configurations of applicant's device, only two contact areas are used, and those contacts are within the footprint of the field plate/resistor combination.

However, given the benefit of applicant's disclosure, the combination may be viewed, as the rejection suggests, as a combination in which the Kondo device is modified by the teachings of Gardner in the manner shown by applicant. That modification is illustrated in the accompanying exhibits. The starting point is Fig. 3 of Kondo, where the field plate 16 has a separate electrical connection 20, and electrical connection 20 is independent of the resistor connection 5-2, as shown in the circled portion of EX A.

Adopting the teaching of Gardner with the benefit of applicant's teaching, the combination becomes as shown in EX B, where the field plate 16 and the resistor connection 5-2 are joined together. That is similar to the structure shown in Fig. 2 of Gardner, and cedes the best case analysis to the combination of references as applied against applicant's claims.

But comparing the result of that combination of Gardner and Kondo, with applicant's claimed structure, there are important differences. One (referring to applicant's Fig. 16) the resistor contact 82, and the runners 90 over the field plate, are formed by the same metal layer (80 in Fig. 15). Also, the second resistor contact 84 is formed from this layer (relevant to claims 35 and 43). In the method inferred from the Kondo/Gardner combination, essentially Kondo since only Kondo shows how to add runners over the field plate, at least two separate layers, and two levels, are required to form these contacts. Applicant's claim 28 specifies that the contact to the field plate/resistor (82 in applicant's Fig. 16) and the runners 90 are formed in one level of metal. Note that this feature might also be inferred from

the structure shown in Fig. 3 of Kondo. But to reach the combination of Gardner and Kondo, as suggested above, the contact 20 of Kondo is eliminated, and now becomes part of another metal level, or is moved laterally outside to footprint of the resistor. So when Gardner is combined with Kondo, the combined teaching is actually removed in a significant way from the claimed invention.

A second advantage of the embodiment shown in Fig. 16 is that the contact 82 that electrically connects to the resistor body, and the runners 90, are contained within the footprint of the resistor element. While that structure is arguably shown in Fig. 3 of Kondo (EX A), it is not present when Kondo is combined with Gardner (EX B). So again, when Gardner is combined with Kondo, the combined teaching is further removed from the claimed invention.

In the embodiment of Fig. 16, all three elements, 82, 84 and 90, are formed within the footprint of the resistor element 38. Independent claim 35 has been amended to more clearly specify this feature. New claim 43 adds this feature to independent claim 36.

With regard to the rejection of claims 32 and 39, and the addition of the Davis et al. reference, Davis et al. do not supply the deficiencies noted above. Davis et al. is cited as showing an insulative spacer. Applicant relies for patentability of claims 32 and 39 on the combination of the insulative spacer with the elements recited in the independent claims.

In view of these amendments and remarks, reconsideration and allowance of claims 28-30, and 32-43 is requested.

In the event that the Examiner concludes that a telephone call would advance the prosecution of this application, the Examiner is invited and encouraged to call the undersigned attorney at Area Code 757-258-9018.

Respectfully,



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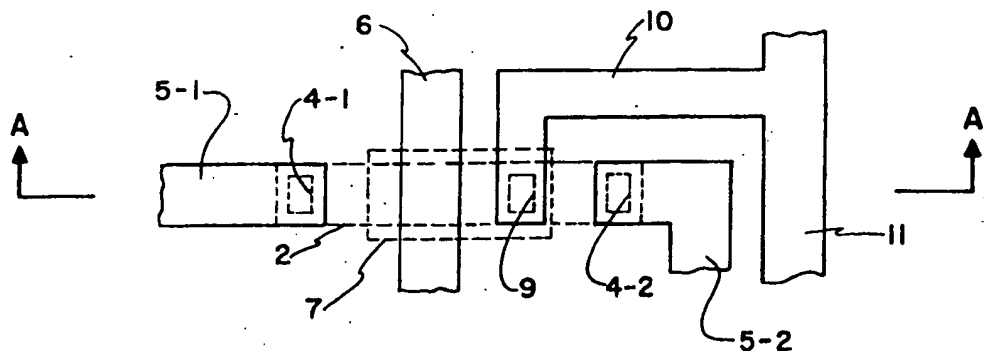
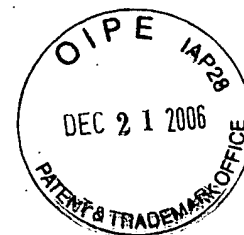


FIG. 1A

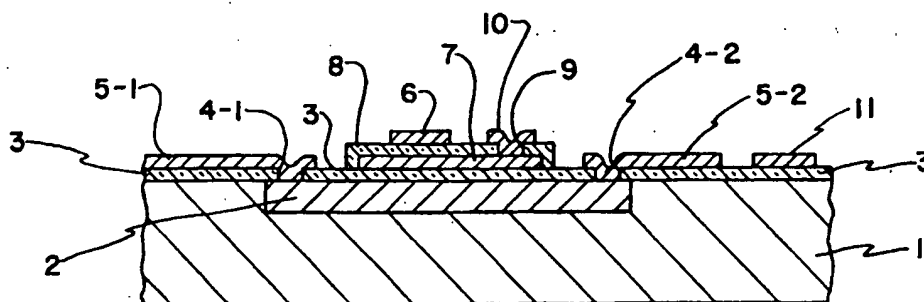


FIG. 1B

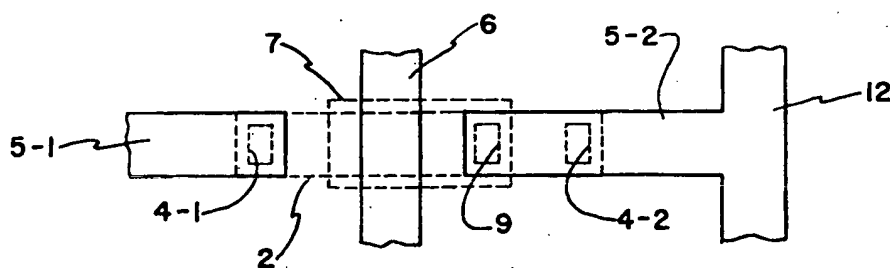


FIG. 2

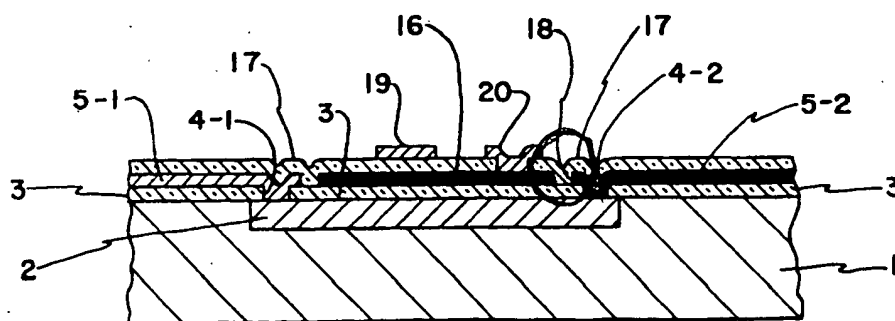


FIG. 3

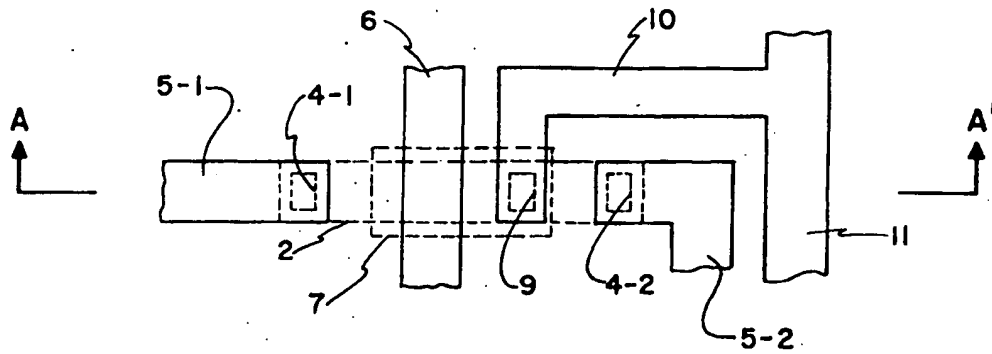


FIG. 1A

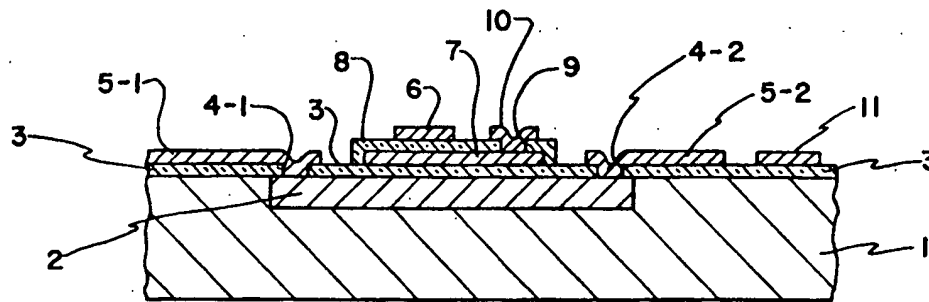


FIG. 1B

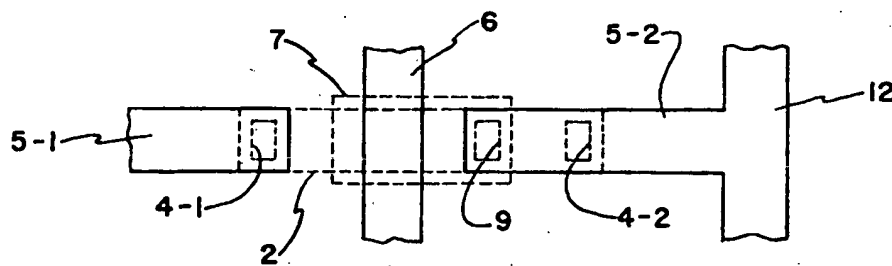


FIG. 2

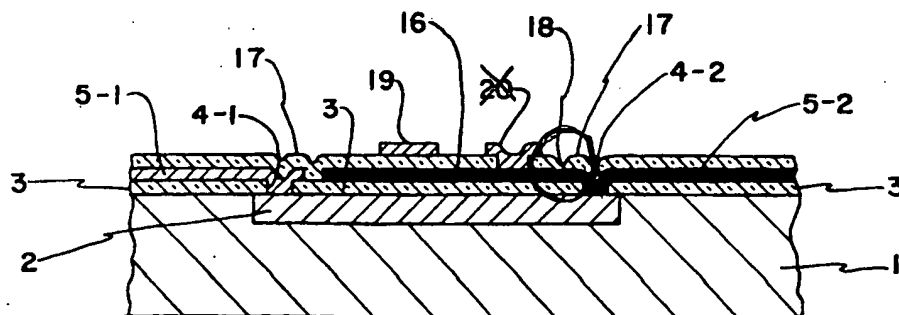


FIG. 3